PATENT/OFFICIAL

Docket No.: 005918 USA/FPS/MMCS/APC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of

HANMUGASUNDRAM et al.

Serial No. 09/943,955

Group Art Unit: 1765

Filed: August 31, 2001

Examiner: Lynette T. Umez Eronini

For:

FEEDBACK CONTROL OF A CHEMICAL MECHANICAL POLISHING DEVICE

PROVIDING MANIPULATION OF REMOVAL RATE PROFILES

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Honorable Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached form PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This submission does not constitute a representation that a search has been made or that no better art exists and does not constitute an admission or representation that any of the listed. documents is material or constitutes prior art. If it should be determined that any of the listed documents does not constitute prior art under the United States law, Applicants reserve the right

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to present to the Office the relevant facts and law regarding the appropriate status of such document.

Please charge the fee of \$180.00 under 37 CFR 1.17(p) to Deposit Account No. 08-0219. The Commissioner is hereby authorized to charge any additional fees that may be required for this submission, or credit any overpayment to deposit account no. 08-0219.

Respectfully submitted,

Wilmer Cutler Pickering Hale and Dorr LLP

Scott M. Alter

Registration No. 32,879

The Willard Office Building 1455 Pennsylvania Avenue, NW Washington, DC 20004

TEL (202) 942-8428 SMA/lrm

FAX (202) 942-8484 Date: 6 / 1 / 04

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)

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SHANMUGASUNDRAM et al.

FILING DATE August 31, 2001 GROUP 1765

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
 -	4,957,605	09/18/90	Hurwitt et al.			04/17/89
	5,369,544	11/29/94	Mastrangelo			04/05/93
	5,444,837	08/22/95	Bomans et al.			12/29/93
	5,665,214	09/09/97	Iturralde			05/03/95
	5,695,810	12/09/97	Dubin et al.			11/20/96
	5,824,599	10/20/98	Schacham-Diamand et al.			01/16/96
	5,825,356	10/20/98	Habib et al.			03/18/96
	5,831,851	11/03/98	Eastburn et al.			03/21/95
	5,838,951	11/17/98	Song			08/28/96
	5,859,777	01/12/99	Yokoyama et al.			05/13/97
	5,871,805	02/16/99	Lemelson			04/08/96
	5,943,550	08/24/99	Fulford, Jr. et al.			03/29/96
	6,012,048	01/04/00	Gustin et al.			05/30/97
	6,037,664	03/14/00	Zhao et al.			03/31/98
<u> </u>	6,059,636	05/09/00	Inaba et al.			07/09/98
	6,096,649	08/01/00	Jang			10/25/99
,	6,100,195	08/08/00	Chan et al.			12/28/98
	6,114,238	09/05/00	Liao	1		05/20/98
	6,150,270	11/21/00	Matsuda et al.			01/07/99
	6,157,864	12/05/00	Schwenke et al.			05/08/98
	6,181,013 B1	01/30/01	Liu et al.			03/13/00
	6,212,961 B1	04/10/01	Dvir			02/11/99
6,226,563 B1 6,237,050 B1		05/01/01	Lim			09/04/98
		05/22/01	Kim et al.			09/04/98
	2001/0006873 A1	07/05/01	Moore			02/13/01
	6,259,160 B1	07/10/01	Lopatin et al.			04/21/99
	6,281,127 B1	08/28/01	Shue			04/15/99

CITATION IN AN APPLICATION (PTO-1449) AUG 1 1 2004

ATTY. DOCKET NO. 005918 USA/ FPS/MMCS/APC SERIAL NO. 09/943,955

APPLICANT

SHANMUGASUNDRAM et al.

FILING DATE August 31, 2001 GROUP 1765

U.S. PATENT DOCUMENTS

			U.S. TATENT DOCUMENTS			
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,317,643 B1	11/13/01	Dmochowski			03/31/99
	6,339,727 B1	01/15/02	Ladd			12/21/98
	6,355,559 B1	03/12/02	Havemann et al.			11/03/00
	6,391,780 B1	05/21/02	Shih et al.			08/23/99
	6,417,014 B1	07/09/02	Lam et al.			10/19/99
	6,427,093 B1	07/30/02	Toprac	_		10/07/99
	6,449,524 B1	09/10/02	Miller et al.			01/04/00
	6,455,415 B1	09/24/02	Lopatin et al.			04/16/01
	2002/0165636 A1	11/07/02	Hasan			04/24/02
	6,484,064 B1	11/19/02	Campbell			10/05/99
	6,495,452 B1	12/17/02	Shih			08/18/99
	2002/0193899 A1	12/19/02	Shanmugasundram et al.			05/01/02
	2003/0017256 A1	01/23/03	Shimane			06/12/02
	6,515,368 B1	02/04/03	Lopatin et al.			12/07/01
	6,517,414 B1	02/11/03	Tobin et al.			03/10/00
	6,528,409 B1	03/04/03	Lopatin et al.			04/29/02
	6,537,912 B1	03/25/03	Agarwal			08/25/00
	6,580,958 B1	06/17/03	Takano			11/22/99
	6,605,549 B2	08/12/03	Leu et al.			09/29/01
	6,607,976 B2	08/19/03	Chen et al.		,, ,, ,,	09/25/01
	6,616,513 B1	09/09/03	Osterheld			04/05/01
	6,624,075 B1	09/23/03	Lopatin et al.			11/05/02
	6,630,741 B1	10/07/03	Lopatin et al.			12/07/01
	6,660,633 B1	12/09/03	Lopatin et al.			02/26/02
	6,708,074 B1	03/16/04	Chi et al.			08/11/00
	6,708,075 B2	03/16/04	Sonderman et al.			11/16/01
	6,728,587 B2	04/27/04	Goldman et al.			12/27/00
EXAMINER		<u> </u>	DATE CONSIDER	RED		, 18180

EXAMINER DATE CONSIDERED

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)				ATTY. DOCKET NO. 005918 USA/ FPS/MMCS/APC		SERIAL NO. 09/943,955		
AUG 1 1 2	2004	ŕ		APPLICANT SHANMUGASU	JNDRAM 6	et al.	·	
PRADEMARK OFF			FILING DATE August 31, 2001		GROUP 1765			
		FOR	EIGN PATEN	T DOCUMENTS				
EXAMINER'S INITIALS	PATENT NO.	DATE		COUNTRY	CLASS	SUBCLASS	Translation Yes No	
	EP 0 932 195 A1	07/28/99	EP			+	X	
	EP 1 083 470 A2	03/14/01	EP			 	X	
	GB 2 365 215 A	02/13/02	GB				X	
<u> </u>		<u> </u>	<u> </u>	Title, Date, Pertinen	t Pages Etc	<u> </u>	1 **	
	<u> </u>	CVD and PVD		tal Nitrides as Diffus			zation.'	,
	Tagami, M., A. Fur	uya, T. Onode	•	ashi. 1999. "Layered OCVD-Cu Damascer		• ,		•
	Investigation and E	lectrical Evalu	ation of a Bott	n, H. Bender, T. Noga omless I-PVD TA(N) 2000. San Diego, CA	Barrier in I			SEM
	Eisenbraun, Eric, O "Atomic Layer Dep Applications" (Abs	scar van der Stoosition (ALD) tract). <i>IEEE</i> .	traten, Yu Zhu of Tantalum-I pp. 207-209.	, Katharine Dovidenk Based Materials for Z	to, and Alainero Thickne	ss Copper Barr		
	Characterization of	ALD Tin Used	d as a Copper I	and K. Pfeifer. 2001 Diffusion Barrier in 0 <i>Conference 2001</i> . M	.25 mum, D	ual Damascene	Backer	nd
		iffusion Barrie		f Pulse Plasma Enhar iterconnect" (Abstrac		-		02,
	Juhanoja, and Wim	F.A. Besling.	2002. "Diffus	Wei-Min Li, Juhana ion Barrier Depositionals. Vol. 14, No. 13-	on on a Copp	per Surface by A	-	
				.H. Tsai, M.W. Lin, C Damascene Technol				
	Performance Testing Metallization." <i>IEE</i>	g of Ultrathin A EE. pp. 188-19	Atomic Layer 1 0.	A. Kaloyeros. 2002. Deposition Tantalum-	Based Mate	rials for Nanos	cale Co	
	M.S. Liang. 2002.	"Advanced Mo	etal Barrier Fre	C. Chen, G.J. Wang, See Cu Damascene Internations." <i>IEEE</i> . pp. 595-5	erconnects v	_	_	and
	July 25, 2003. International Search Report for PCT/US02/24858.							
	March 30, 2004. W	ritten Opinion	for PCT/US02	2/19062.				
	April 9, 2004. Writ	ten Opinion fo	r PCT/US02/1	9116.			-	
	April 22, 2004. Off	ice Action for	U.S. Serial No	. 09/998,372, filed N	ovember 30	, 2001.		
EXAMINER				DATE CONSIDERE	D			-,

		SHEET 4 OF 4	
INFORMATION DISCLOSURE	ATTY. DOCKET NO.	SERIAL NO.	
CITATION IN AN	005918 USA/ FPS/MMCS/APC	09/943,955	
APPLICATION	11 S/WIVICS/AT C		
(PTO-1449)			
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1 1 2004 😅	SHANMUGASUNDRA	AM et al.	
TRADEMARTA	FILING DATE	GROUP	
TRADEMARTE	August 31, 2001	1765	
	thor, Title, Date, Pertinent Page	es, Etc.)	
April 28, 2004. Written Opinion for PCT	/US02/19117.		
April 29, 2004. Written Opinion for PCT	/US02/19061.		
May 5, 2004. International Preliminary E	xamination Report for PCT/US01/	/27406.	
May 28, 2004. Office Action for U.S. Ser	ial No. 09/943,383, filed August 3	31, 2001.	<u>-</u> .
June 3, 2004. Office Action for U.S. Seria	al No. 09/928,474, filed August 14	, 2001.	····
June 23, 2004. Office Action for U.S. Ser	ial No. 10/686,589, filed October	17, 2003.	· · · · · · · · · · · · · · · · · · ·
June 30, 2004. Office Action for U.S. Ser	ial No. 09/800,980, filed March 8	, 2001.	
July 12, 2004. Office Action for U.S. Seri	ial No. 10/173,108, filed June 8, 2	002.	<u>, </u>
			
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